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THE CONFUSED BASES OF THE NAME PINUS PALUSTRIS

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While Dr. Schubert's and my study of the only probably existing type of *Pinus palustris* Mill. Gard. Dict. ed. 8, species no. 14 (1768) was in course of publication in RHODORA, 1. 181-186 (1948) Dr. E. L. Little, Jr. of the Forest Service was publishing, in *Phytologia*, ii. 457-458 (1948), a conclusion which was quite contrary to ours. Subsequently I have received from Mr. W. A. Dayton a letter in which he pleads for the retention of the name *Pinus palustris* for Longleaf Pine and a statement that Little had shown that the name, *P. australis* Michx. f. Hist. Arb. Am. i. 64, pl. 6 (1810), was an illegitimate substitute, because after his diagnosis Michaux filius had cited "*P. palustris*. Linn." Dr. Schubert and I had felt that *P. australis*, described in great detail, beautifully illustrated and clearly understood by the younger Michaux, who had for years known it with evident understanding, was a wholly legitimate name, the synonym "*P. palustris*, Linn." being what nowadays would be cited as "sensu L.", although Linnaeus had no such species. The younger Michaux not only clearly defined, discussed, illustrated and knew the species; he specially pointed out (p. 85) that it could not be what some others, including "Linn.", i. e. Willdenow, but notably Lambert, had described as *P. palustris*. F. A. Michaux was definitely defining a new species, not merely publishing a substitute-name, in the manner of Salisbury and some others.

As already shown, the only extant specimen which bears in a hand, possibly Miller's, the identification as *P. palustris* is a leafy branch of *P. Taeda* L. and Miller's account of the wood and the habitat are those of the early stands of *P. Taeda*, not those of *P. australis*. The phrases in Miller's account which seem vividly to impress those who wish to keep the names they have learned are "foliis longissimis", "the longest leaves" and "leaves are a foot or more in length", without too much regard to the characters which do not belong to *P. australis*. As already noted, "longissimis" could well have been in contrast with the relatively short-leaved species more familiar to both Miller and Du Hamel (quoted by him). The "foot or more in length" is the only contradictory phrase.

Although *Pinus palustris* dates nomenclaturally from 1768, the first edition of Miller's Dictionary in which binomials were somewhat consistently used, Miller's treatment there was a considerable departure from his first account. The species was, apparently, first defined in Mill. Gard. Dict. ed. 3, iii. sp. no. 19 (1737) as

19. PINUS *Americana palustris patula, longissimis & viridibus setis.*
Marsh spreading *American* Pine, with the longest green Leaves.

and, some pages beyond, Miller went on:

All these Sorts of *American* Pines should be planted on a Soil rather moist than dry, but especially the nineteenth Sort, which grows naturally on low moist boggy Places, and will not thrive on a dry Soil. This Tree hath a very remarkable Growth; for the Branches spread on the Ground to a great Distance from the Stem, and never rise in Height ["patula"].

Not only the habitat, "low moist boggy Places", but the "very remarkable Growth" is completely wrong for *P. australis*. For an unprejudiced account of Longleaf Pine see Charles Mohr, *The Timber Pines of the Southern United States*, U. S. Dept. Agric., Div. Forestry, Bull. no. 13 (1896). There plates I and II show the branches certainly not "spread on the Ground to a great Distance from the Stem, and never rise in Height". In other words, the original PINUS *Americana palustris patula* of Miller had little in common with Longleaf Pine.

By 1741 (date acc. to Pritzel), in his ed. 4, Miller slightly modified his description, dropping out the words "*patula*" and

“spreading”. His discussion, however, showed that whatever he called *P. Americana palustris* was neither successful nor appreciated in England:

“There are very few Plants of the nineteenth Sort at present in *England*, which are grown to any Height; but some Years ago there were many of them growing at Mr. *Ball's*, near *Exeter*, which were upward of ten Feet high; but these were destroyed by their Owner, who did not like them: this Sort grows on Swamps in *America*,” etc.

By the 7th edition (1759) Miller began to share responsibility with DuHamel and had “been informed” and had “not heard” of various items which he repeated in his binomial ed. 8 (sp. no. 14), quoted by Fernald & Schubert. These add nothing to one’s confidence that *Pinus palustris* was really or primarily Longleaf Pine.

Then came the era of still further misunderstandings and misinterpretations. In 1787 Wangenheim published his *Beytrag zur teutschen holzgerechten Forstwissenschaft, die Anpflanzung Nordamericanischer Holzarten*, a work in which many statements were made which were at once seized upon, by those who had no first-hand experience with our trees, as the last word. It was Wangenheim’s account of the habitat, range and wood of “*Pinus palustris*” or “Swamp Pine”, as quoted in translation by Lambert¹ in his *Descr. Gen. Pinus*, 27, 28, t. 20 (1803), which finally persuaded F. A. Michaux (his p. 85) to abandon the name *P. palustris* for Longleaf Pine; and surely anyone who knows *P. australis* must agree that Lambert was as badly confused as was Miller. The great brush of foliage, with staminate aments, was not from Miller but was drawn from one brought back “by that indefatigable collector, Mr. John Fraser”, who was not born until 13 years after Miller’s first account of his *PINUS Americana palustris*. The cone, described by Lambert “*Strobili spithamaei, subcylindranei, recti, tuberculoso-muricati, spinis brevibus, in-*

¹The various editions of Miller’s Dictionary, whether folio or “abridged”, are obscure enough to follow but Lambert’s Description of the Genus *Pinus* was one of the most republished and rearranged of works, to the point that in *Journ. Linn. Soc. Lond. (Bot.)*, xlviii. 439–466 (1930) Renkema & Ardagh were forced to use 28 pages in order to enumerate and clarify the very many issues, rearrangements of plates and other changes. Fortunately for us, the treatment in the folio issue of ed. 1 (1803) was not materially changed in “Editio minor” of 1832. In the former tab. 20 consists of a staminate flowering branch, with great brush of foliage 4 dm. across, a cone and details; in the latter these illustrations are cut apart, tab. 24 being three-eighths of the brush, tab. 25 the cone and details.

curvis, obsoletis", is, on the other hand, what at Miller's establishment, the Chelsea Gardens, was supposed to belong to Miller's species, Lambert definitely saying: "I am indebted to Mr. Fairbairn, of Chelsea Gardens, for the cone from which that in the plate was drawn".

Now, the cone of Longleaf Pine, as well illustrated by F. A. Michaux, who intimately knew the tree, by Mohr, l. c. plates V and VI, who was considered by the Division of Forests competent to prepare a memoir, by Faxon in Sargent, Silva, xi. t. dxc or by Shaw, Genus Pinus, pl. xxviii (1914) and by very many preserved specimens, has the central apophysis of each scale with a strong and recurved unguiculate short spine, very tough and sharp in dried cones. Examination of the drawing of the cone which, at Chelsea Gardens nearly a century and a half ago, was preserved as representing Miller's species, shows apophyses projected forward and not with a recurving short spine ("spinis brevibus, incurvis, obsoletis"). This drawing at once set the standard and was copied repeatedly—by Loudon, James Forbes (Pinetum Woburnense) and others; but if accurately drawn (and who can doubt it?) it could hardly have come originally from Longleaf Pine. It is, however, very similar, in the central umbo of the scale, with the prickle obscure ("obsoletis") and not recurved, to the cone of the common eastern Mexican *P. montezumae* Lambert, Descr. Pinus, ed. of 1832: t. 22 (1832). *P. montezumae* was a renaming of *P. occidentalis* sensu HBK. (1817), not Swartz; Kunth, in describing it, citing many stations, including Mt. Orizaba and others within or adjacent to the state of Vera Cruz. Comparison of Lambert's cone, which at the Chelsea Gardens was supposed to represent Miller's *P. palustris*, with the illustration of Lambert's original cone under his *P. montezumae* or with those shown as *P. montezumae* in Shaw's Pines of Mexico, pl. xiv (1909) or his Genus Pinus, pl. xxv (1914) shows not much to distinguish them. It is impossible to scan the pages of Miller's ed. 8 without noting hundreds of entries such as the following: "sent me from La Vera Cruz, by the late Dr. Houstoun" (*Jussiaea*, no. 5). In other words, Dr. William Houstoun (1695–1733), Surgeon to the South Sea Company, was regularly supplying the Chelsea Gardens with material from Vera Cruz and other areas in eastern Mexico. What more

probable than his including fruits of the more conspicuous trees? It does not add to the clear identification of Longleaf Pine as Miller's *P. palustris*, that his successors at Chelsea Gardens and the learned Dr. Lambert (and his many followers) should have used to illustrate it a cone which obviously did not come from Longleaf Pine. Incidentally, as already noted, since the only preserved specimen which may have been identified by Miller as his *P. palustris* is a foliage-specimen of *P. Taeda* L., the conclusion is obvious.

If other evidence were needed that the name *Pinus palustris* covered several species and is not clearly identifiable with just one, it can easily be found—it makes itself very obvious. For instance, Poiret, in Lam. Encyc. v. 341, sp. no. 12 (1804), writing at approximately the same time as Lambert's first edition and citing the stock phrases of DuHamel, Miller and others, about a tree of "les lieux humides & marécageux", but with leaves only "longues de huit à neuf pouces", gave a rather startling account of its immediate distinction from other pines because of "la position de ses feuilles toutes unilatérales ou attachées à un seul côté des branches", this reading, not like a description of the heavy brushes of overlapping fascicles of Longleaf Pine but very much like an account of a branch with a single unilateral row of fascicles of *Pinus patula* Schlecht. & Chamisso of Vera Cruz and adjacent states of eastern Mexico. See Shaw, Pines of Mexico, pl. xxii. This again shows the utter confusion which early interpreters of Miller's hearsay species, *P. palustris*, added to the problem; and when Lambert in a monograph of the genus so sumptuously published as to look authoritative to those who did not trouble to check the sources, swallowed whole everything Wangenheim had written he showed as blank ignorance of Longleaf Pine as did Miller. As noted above, it seems to have been this inclusion of Wangenheim's impossible account which forced F. A. Michaux to abandon the name *P. palustris*, for he cited as "défectueux" details of Lambert's plate and quoted Lambert's account of the wood, etc. as offering a description "de toute manière, une telle disparité avec la mienne". Lambert's summary from Wangenheim, also translated by Michaux into English and French, was as follows:

Wangenheim found it in Pennsylvania, as far northward as forty degrees latitude, but there, he remarks, it is generally solitary and the

offspring of cultivation . . . Dry, elevated land does not seem to suit it, but low marshy spots sufficiently sheltered, says Wangenheim. . . . The *bark* is grey and much cracked upon old trees. The *wood* is of a reddish white colour, soft, light, and very sparingly impregnated with resin; it soon decays and burns badly. It is so little esteemed, that as long as any other kind of wood is to be had, not the least use is made of it.

Compare the authoritative statements in Mohr's splendid account published by the Division of Forestry:

The northern limit . . . on the coast near the southern boundary of Virginia (p. 30) . . . [in] The Atlantic pine region . . . The highly siliceous soil of these pine barrens offers but little inducement for its cultivation . . . by far the greater part of the timber standing has been tapped for its resin . . . impregnated as they are with resin, are used for piling and for posts of great durability (pp. 31, 32) . . . The wood of the Longleaf Pine is hardly surpassed by any of our timber trees . . . in naval architecture, for masts and spars; . . . for the building of bridges, viaducts, trestlework . . . Whenever the sapwood . . . is laid bare copious exudation of resin takes place and the surrounding wood becomes charged with it. Thus the wood . . . soon becomes charged with this . . . and . . . the wood increases in weight and durability. (pp. 46, 47) . . . The trunk is covered with a reddish-brown bark . . . scaling off in thin, bluish, almost transparent rhombic flakes (p. 49).

It is certainly impossible to reconcile Mohr's authoritative account with that of Wangenheim, which has been copied and recopied from its start and which, surely, was not based on real Longleaf Pine. Incidentally, if Longleaf Pine had spread from cultivation northward to the latitude of Philadelphia, it is remarkable that that untiring group of local explorers from Barton to Porter and the present corps of active botanizers, have not seen it, especially when they have laid such stress on everything which wanders outside the garden-fence.

It should be quite apparent that *Pinus palustris* started as a vague conception, the only extant specimen possibly identified by Miller being of *P. Taeda* L.; that with the addition of further items, largely by Miller, the identity became more confused; that Wangenheim wholly tangled the identity and that his followers from Lambert on further made "confusion worse confounded" of the concept. When F. A. Michaux broke from line and properly defined and illustrated Longleaf Pine as *P. australis* he clarified the situation. His clarification was accepted by many of the most careful students up to 1880, when Sargent

revived the name *P. palustris*. One other name has been cited, this antedating *P. australis*. I refer to *P. lutea* Walt. Fl. Carol. 237 (1788). This is commonly cited as identical with "*P. palustris*", but Walter's diagnosis of 7 words was inconclusive. Of *P. palustris* he said "spinis adscendentibus", not good for Longleaf Pine; of his *P. lutea* "spinis rectis", equally poor. Fraser had four sterile leafy branches of Walter's pines in his Herb. Walt. If the thoroughly clear *P. australis* Michx. f. is unsatisfactory to some, they could make an anatomical study of the leaves of the pines preserved in the Fraser volume and presumably find that one of the long-leaved branches is from Longleaf Pine, the other from Slash Pine; then they would have to decide convincingly which of them was meant by Walter's *P. lutea*.

In *Phytologia*, ii. 451–456 (1948) Dr. Little stated that he would "prohibit" in the future the revival of old names, because careful study of types or bases of old but heretofore not accurately typified names often leads to inconvenient changes, inconvenient to those who have learned and are satisfied with the wrong name. His proposition supplements one by Mr. W. A. Dayton in *Journ. Forestry*, xli. 373 (1943) "to disallow priority changes due to later discoveries in obscure books 100 years or more old". But certainly the names in many supposedly available works often lead to change. Undoubtedly, when Miller's hundreds of types (if they can be found) are hunted out and carefully studied, they will upset some later names; but if taxonomic work is to involve the exact typification of species, as it should, we must carefully check the identities of species long ago described but too long neglected. An edict sponsored by scientists of any government, which would *prohibit* further investigation of basic facts or factors in chemistry, physics, geology, history or other fields of learning would be an intellectual boomerang and not to the credit of the sponsoring agent. True science is not the outgrowth of shackling.

Everyone is inconvenienced by change from the rut in which he has proceeded but ruts are not the best routes to thorough understanding. Personally I have seen tremendous changes in the current names of plants of the area I best know. As a young man I used Gray's Manual, ed. 5; later ed. 6; then ed. 7; and I am

trying to finish ed. 8. Of the names of vascular plants described in ed. 5 at least 45% have been changed through restudy of the plants or their nomenclatural types or through changes in the International Rules of Nomenclature; of the names accepted in ed. 6 33% have been changed; of those in ed. 7 at least 30%. All this has been very inconvenient; but it is very doubtful if scientists would have welcomed at any of these dates a prohibition of further study of the types. Several times writers on forests at Washington have issued supposedly authoritative lists of names of our trees. In 1884 the federal government issued Sargent's Catalogue of Forest Trees. If the prohibition of change had then been in force we should be writing *Magnolia glauca* (instead of *M. virginiana*), *Acer saccharinum* (instead of *A. saccharum*) for the northern Sugar Maple, *Rhus venenata* (instead of *R. Vernix*), *Nyssa uniflora* (instead of *N. aquatica*) and *Chamaecyparis sphaeroides* (instead of *C. thyoides*). Those would be the names I first learned and gray hair accompanying the unlearning might have been delayed. In 1898 (14 years later than Sargent's Report) a Check List of correct names was issued by the Division of Forestry. If there had been governmental prohibition of any changes after that we should be under orders to write *Pinus divaricata* but the Check List of 1927 called it *P. Banksiana* (but as "banksiana", perhaps because growing on a bank). At both those dates Pecan was called *Hickoria pecan* but now Dr. Little (happily) discards both the generic and the specific names; and so on with many others. It would have pleased me if the names I learned in the late 80's had never changed; it would have been convenient to stop at any of the other magic dates; but would that have been real progress, if our nomenclature and identifications are to rest on exact study of types, not on hit-or-miss guesses?

Prior to the International Congress of 1930 a proposition was pushed, to conserve the names of important economic plants from the changes which might come from applying to them the principle of priority of publication. But almost immediately, as I saw in going over the responses with Dr. Sprague at Kew, botanists of different age-groups in the same countries saw an opportunity to conserve all the binomials they had learned. This formula, followed in many countries and by different

generations, caused the prompt withdrawal of the proposition. Those who earnestly wish conservation of really very important names of economic plants should proceed with care, looking out that their would-be conserved names rest upon undoubted types. The seeking out of types and their conscientious study is an exacting task, neglected by many, but conservation based on accumulated errors, such as surrounded all the early accounts of *Pinus palustris*, is not worth the name. We are not, as scientists, aiming to perpetuate error.

THE PROPOSED CHANGES IN ARTICLE 58,
INTERNATIONAL RULES OF BOTANICAL
NOMENCLATURE¹

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The present Article 58 of the International Rules of Botanical Nomenclature provides that “. . . when a group changes its rank, the earliest legitimate name or epithet given to the group in its new rank is valid, . . .” The proposed changes, originally submitted by Professor Rehder (*Journ. Arnold Arb.* **20**: 275. 1939) and somewhat modified by the Central Committee on Nomenclature of the American Society of Plant Taxonomists, specify that “When no legitimate name exists in the new rank, the earliest existing name or epithet in any rank must be retained . . . For purposes of nomenclatural priority, all subdivisions of species are regarded of the same rank.”

The proposed changes are not retroactive; if they were the mortality might be high. But, to see how this rule might work

¹ For the benefit of such of our readers as have not seen it, the proposal in regard to Article 58, as sent out by the Central Committee on Nomenclature of the American Society of Plant Taxonomists is here reprinted in full.

“Art. 58. Change the basic Article to read as follows and *delete* paragraphs (2) and (3) of Rec. XXXVI:

“When a tribe becomes a family, when a subgenus or section becomes a genus, when a subdivision of a species becomes a species, or when the reverse of these changes takes place, the earliest legitimate name or epithet given to the group in its new rank is valid, unless that name or the resulting association or combination is a later homonym. (see Arts. 60, 61).

“When no legitimate name exists in the new rank, the earliest existing name or epithet in any rank must be retained, unless the resulting association or combination is a later homonym (see Arts. 60, 61); but this applies only to names published after Jan. 1, 1953.

“For purposes of priority, all subdivisions of species are regarded as of the